

HYPOTHETICAL PLANS PRESENTATION

Governor's Vision 21 Task Force

Phoenix, Arizona
December 28, 2000

in association with:

SR Beard and Associates
Mosaic Analytical Planning



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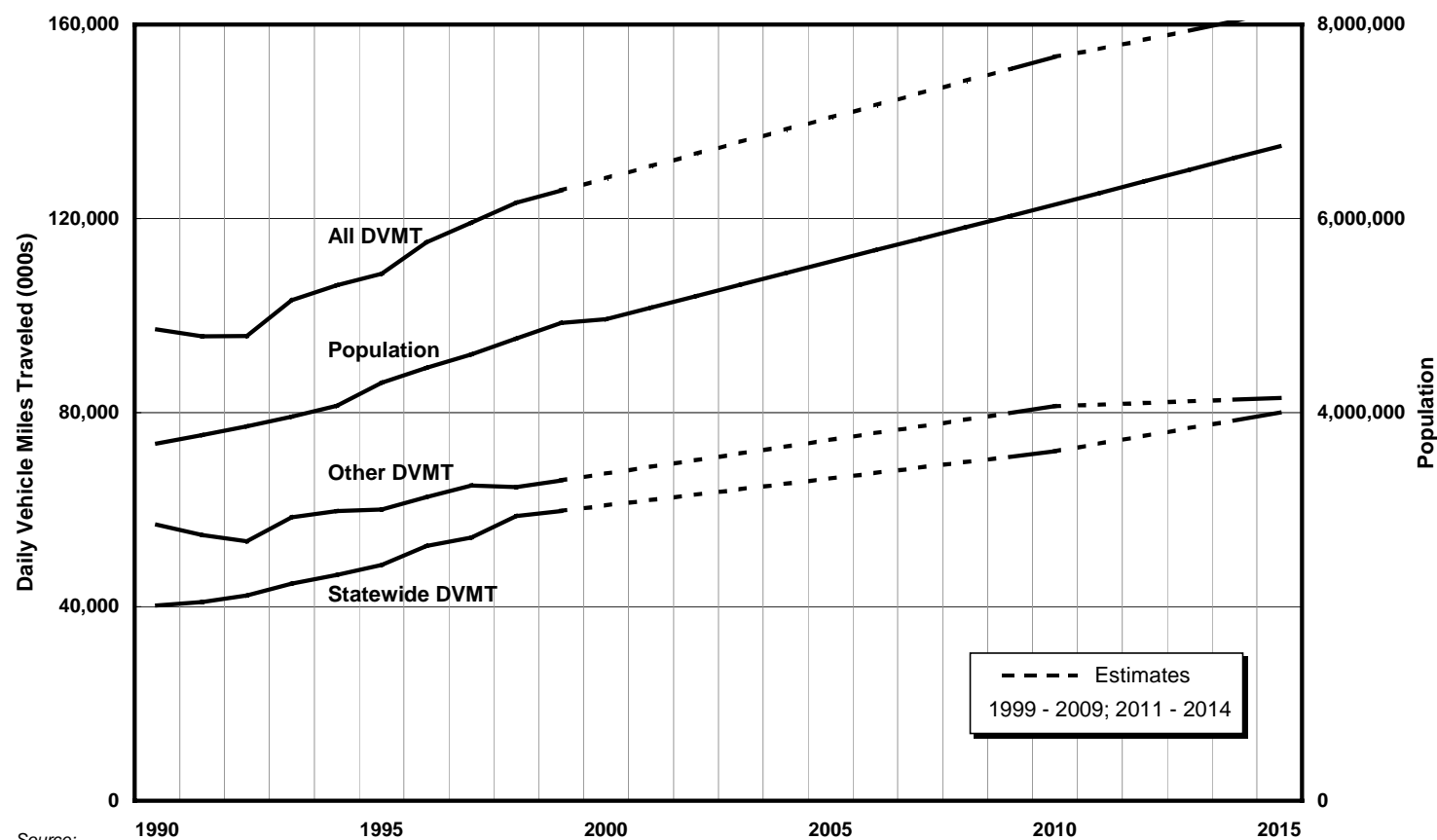
- ▶ I. Context for Transportation Needs Growth
- ▶ II. Refinement of Hypothetical Plans
- ▶ III. Next Steps

I. Context for Transportation Needs Growth

Context

Historically Population Growth Has Been a Good Proxy for Vehicle Travel Growth in Arizona

ARIZONA POPULATION GROWTH VERSUS HIGHWAY / STREET VEHICLE MILE GROWTH



Source:
 Population Data: Arizona Department of Economic Security
 DVMT Data: Arizona Department of Transportation, Booz-Allen analysis

Context

Major Indicators Show Trends Continuing Much as the Growth Experienced in the 1980s and 1990s

	1960	1980	2000	2020	Difference 2000-2020	Percent 2000-2020
▶ Arizona Statewide Population, millions	1.30	2.72	4.96	7.36	2.40	48%
▶ People Employed, millions	0.33	1.14	2.30			
▶ Daily Vehicle Miles Traveled (DVMT), millions	27	60	127	190	63	50%

Context

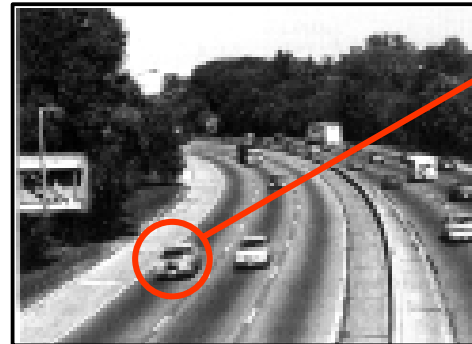
You Can Appreciate Different Level of Service (LOS) by Comparing to Conditions You Drive On a Regular Basis

Freeway Level of Service (Left Side of Illustration)

SR 87 south of Payson
(weekday)



LOS A



LOS B

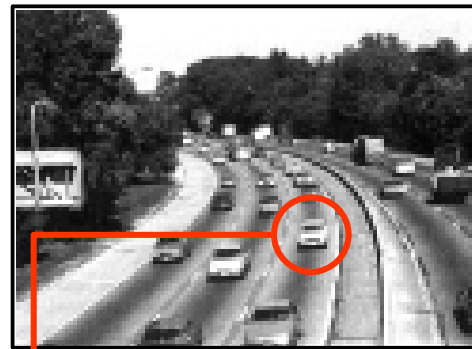


LOS C



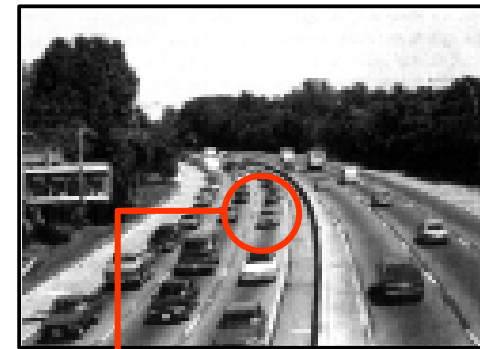
LOS D

I-10 in Tucson
(Grant Road - 22nd Street).
Non-rush hour



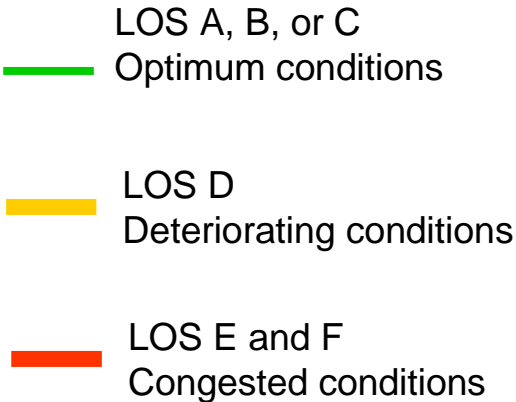
LOS E

I-17 (Glendale Avenue - McDowell Avenue)
in Phoenix as rush hour traffic begins to
subside.

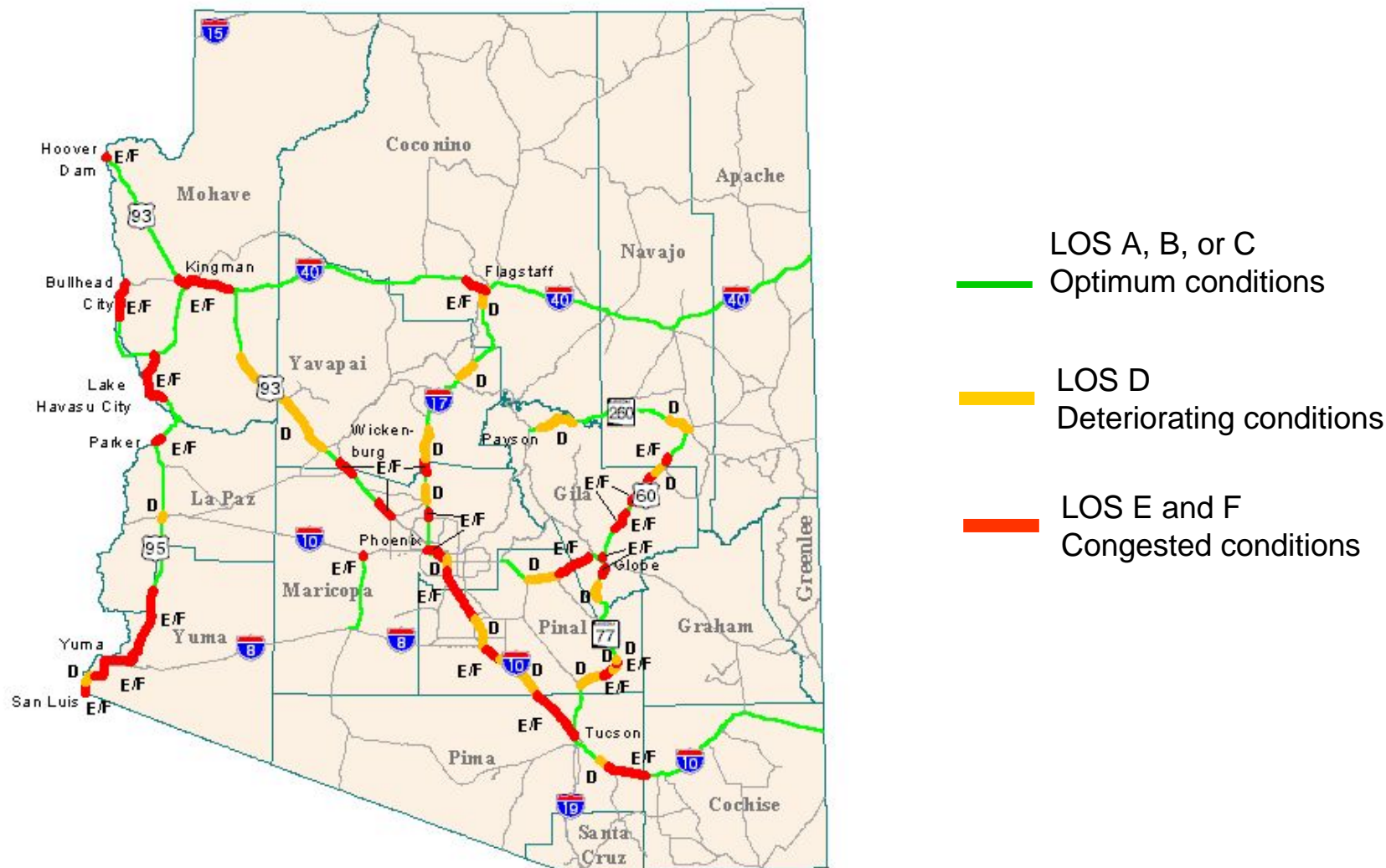


LOS F

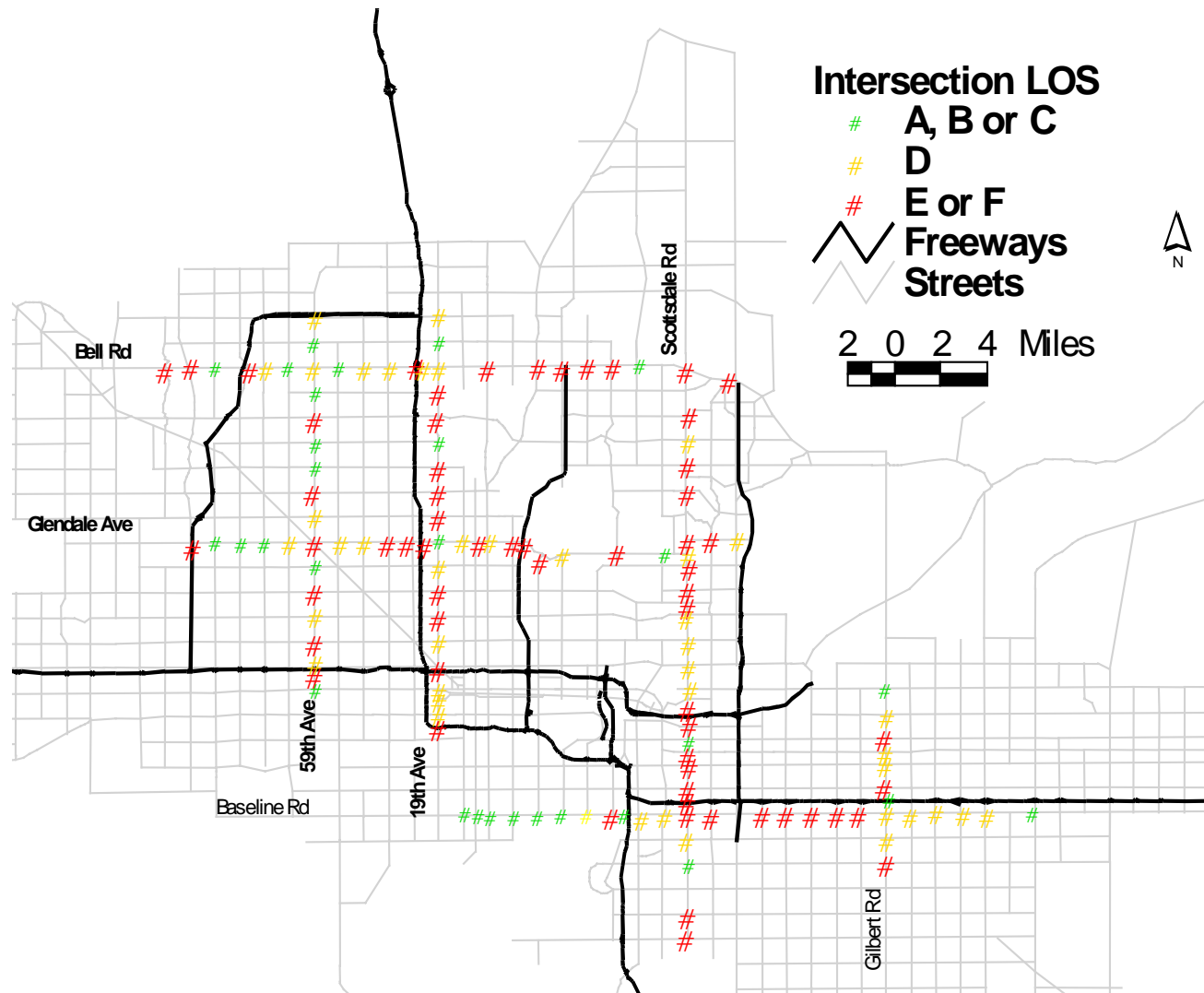
I-10 (Ray Road - the Broadway Curve) in
Phoenix during rush hours.



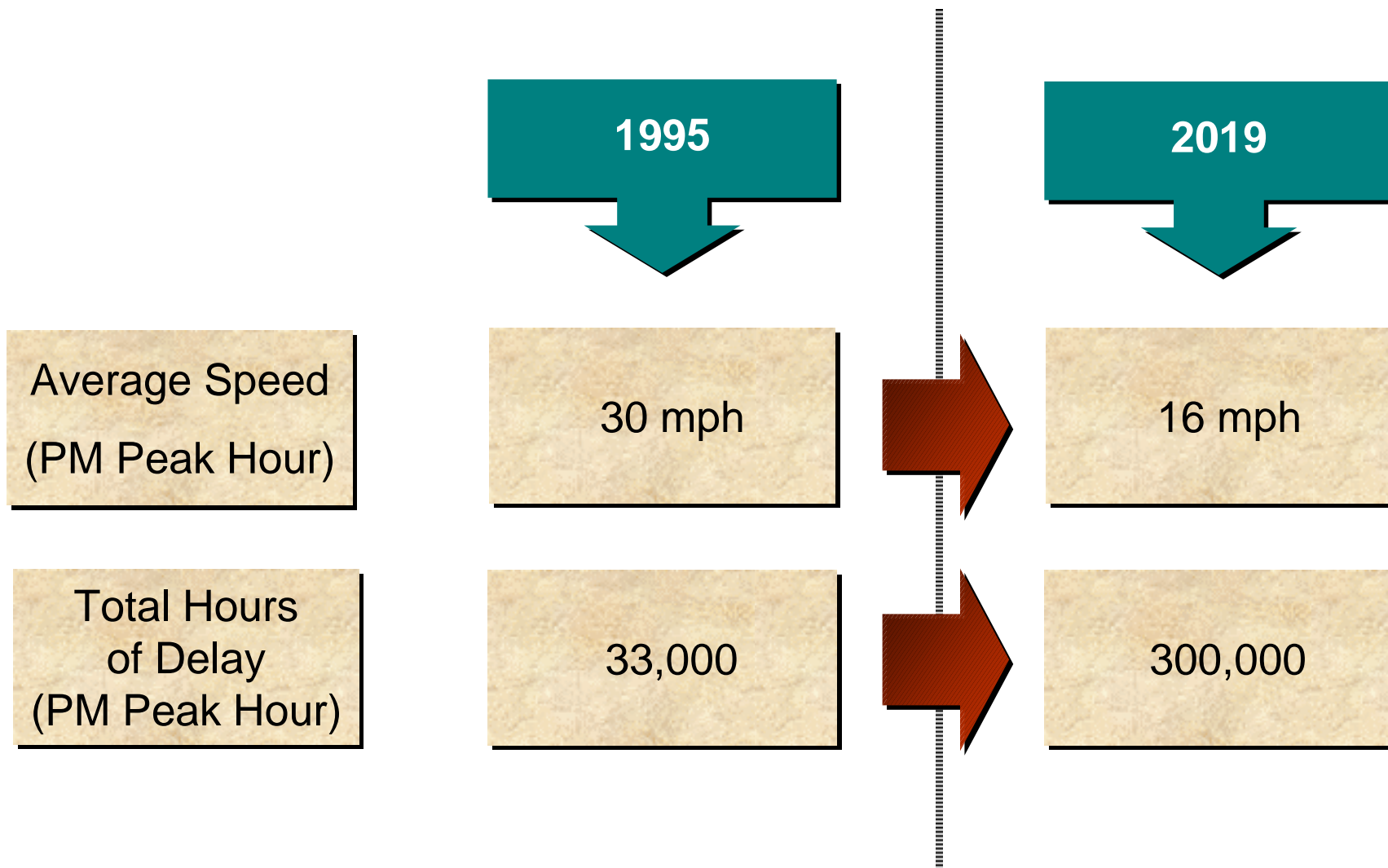
Assuming No New Projects are Built, Conditions By 2020 Will be Much Worse



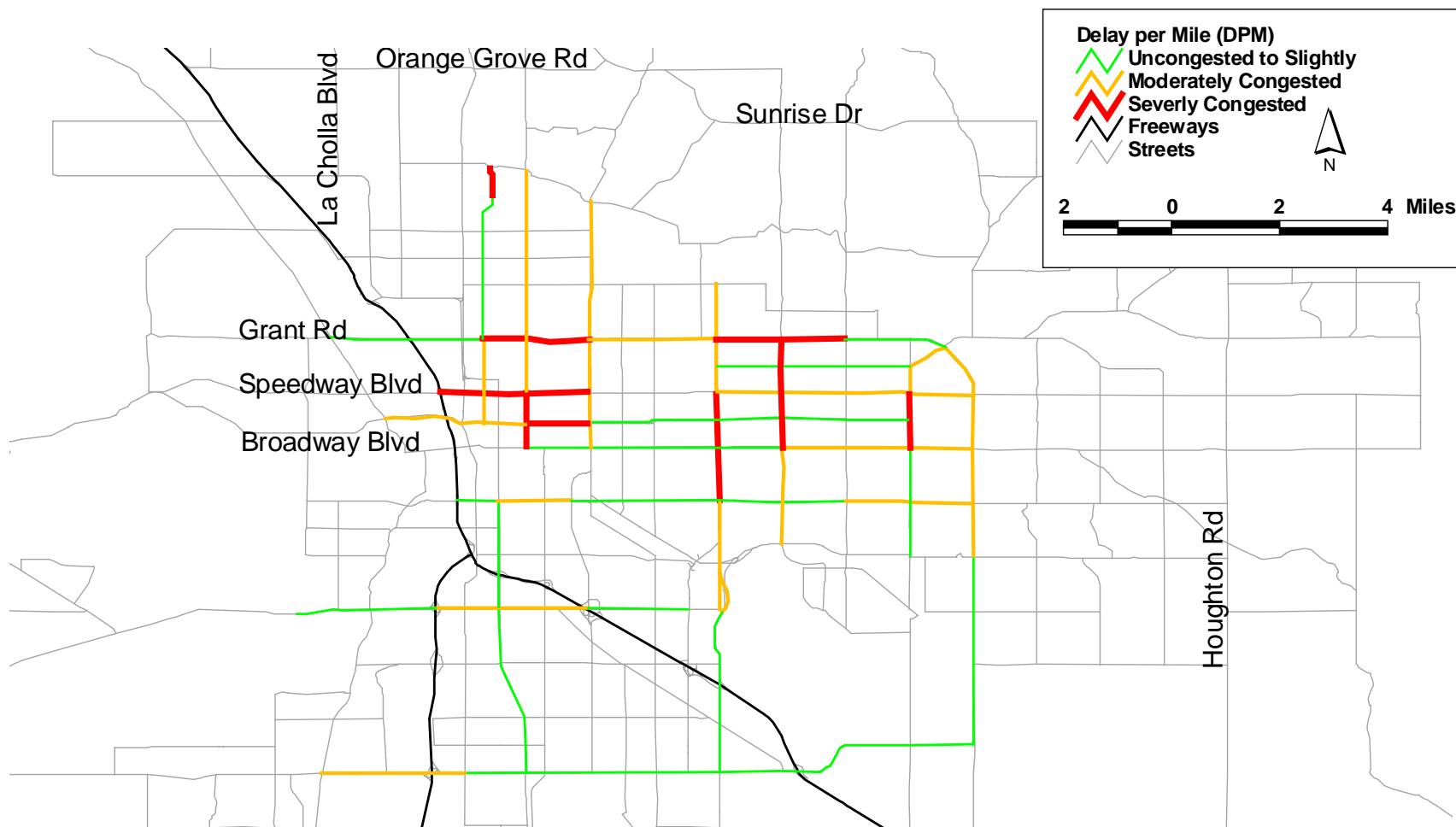
In the Metro Phoenix Area, Hot Spots Exist Along Major Corridors During Peak Hours



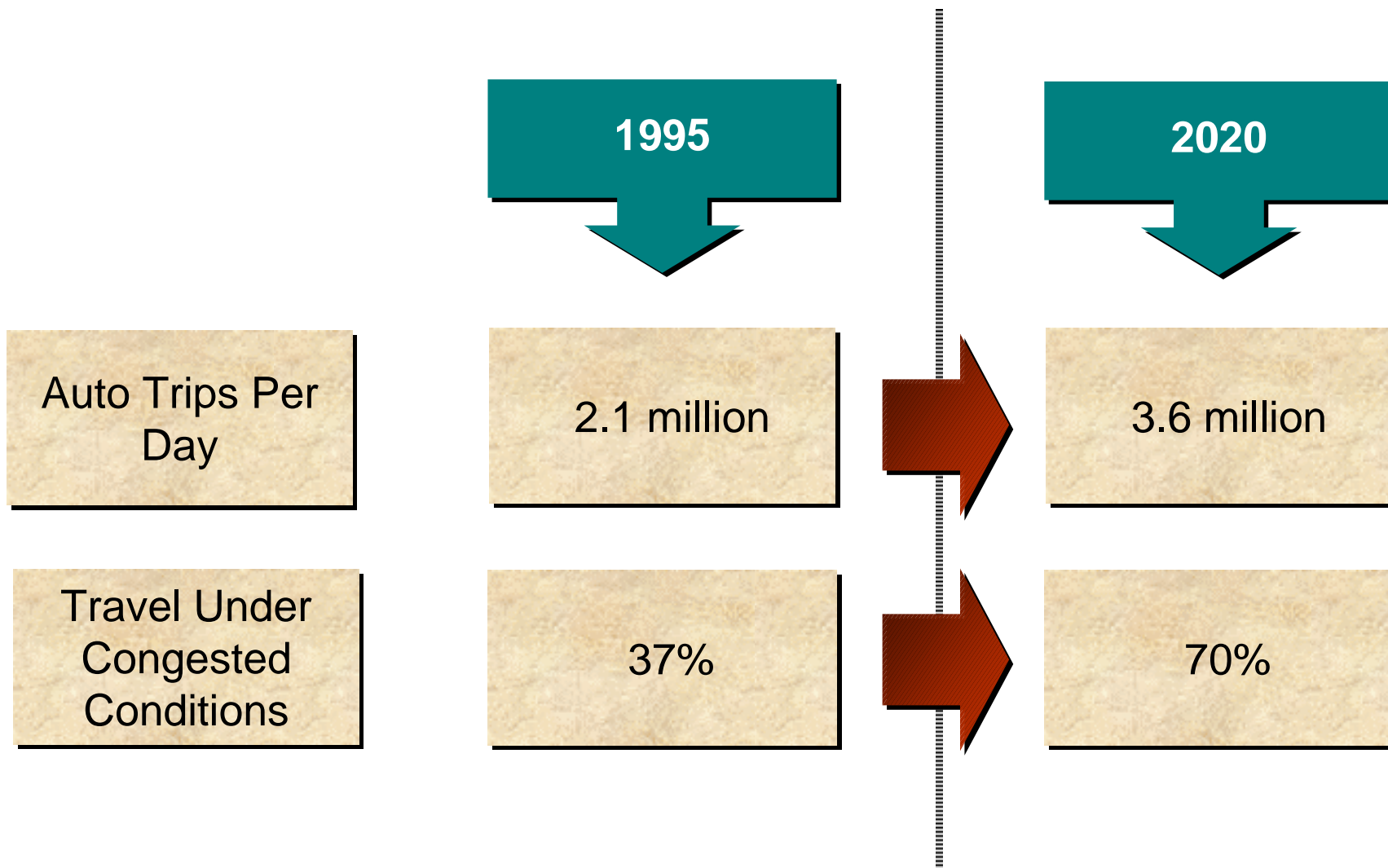
“Do Nothing Through 2020” Repercussions on Mobility in the MAG Region Would Be Severe Especially in the Peak Hour



Within the Metro Tucson Area, Over A Half Dozen Segments are Current Congested in the Peak Hour

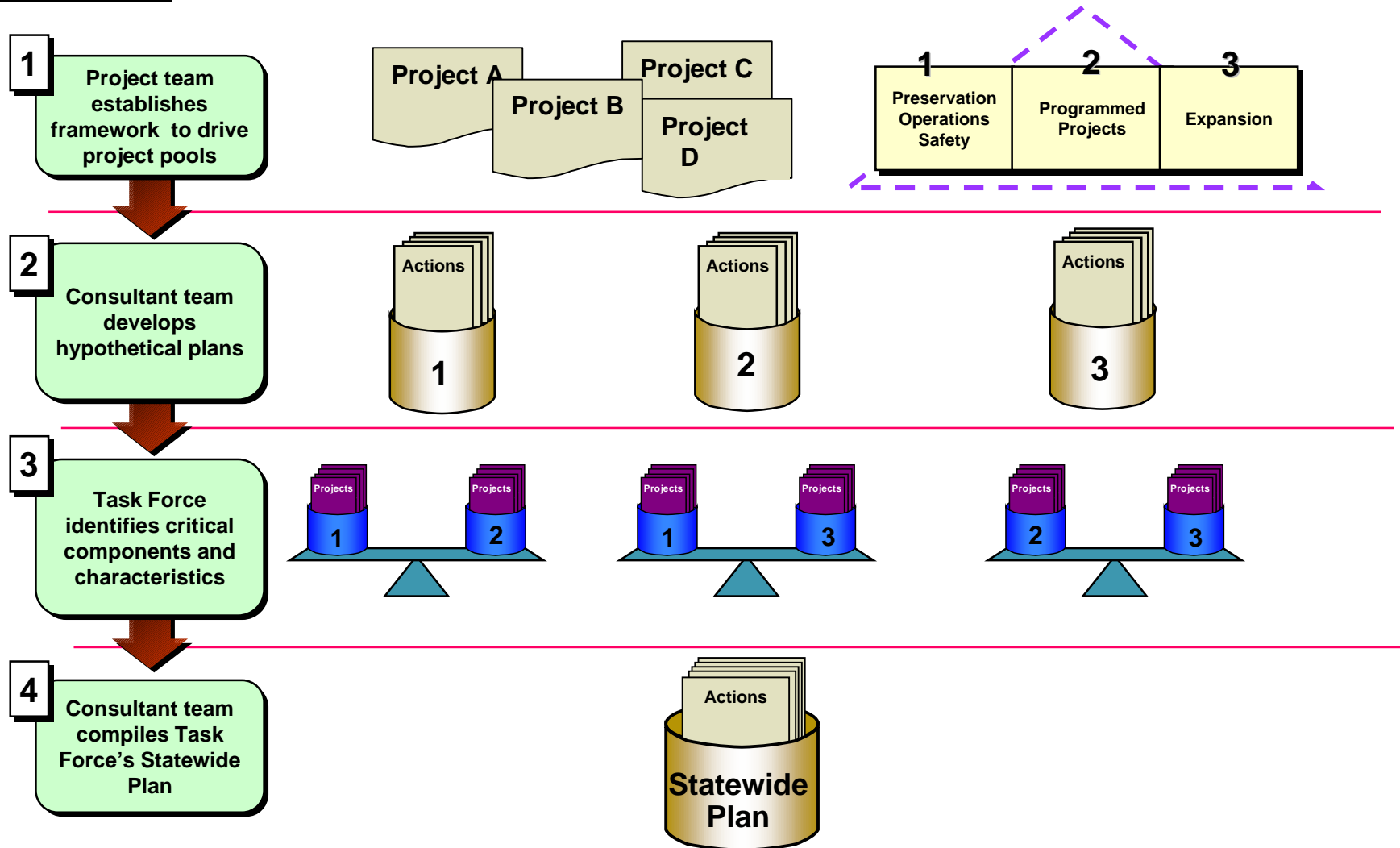


Again, “Do Nothing Through 2020” Repercussions on Mobility Would Be Severe



II. Refinement of Hypothetical Plans

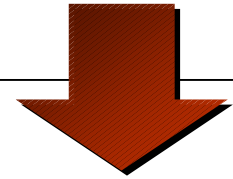
The Task Force Role in This Process is Critical



The Hypothetical Plans Were Developed in Accordance With The Framework Discussed At Our Recent Meetings

- ▶ Four hypothetical twenty-year transportation plans for the state of Arizona were proposed for the Task Force to consider
- ▶ The hypothetical plans reflect statewide priorities
 - maintaining the system in a state of good repair,
 - increasing safety,
 - stimulating economic growth
- ▶ The hypothetical plans address future Arizona transportation needs as reflected in State, regional, local and tribal plans
- ▶ The hypothetical plans are the first step towards developing the comprehensive plan, which may have components of some or all hypothetical plans

The 20-Year Costs For Each Plan Have Been Fine Tuned (in 2000 dollars)



Plan #1	<ul style="list-style-type: none"> • Preserving Existing Infrastructure • Maintaining and Operating The System 	\$19.9 Billion
Plan #2	<ul style="list-style-type: none"> • Implementing all Programmed Projects • Similar Pattern of Expenses over 20 Years 	\$53.9 Billion
Plan #3	<ul style="list-style-type: none"> • Expansion Scenario with Roadway Focus • Builds on Plans #1 and #2 	\$64.2 Billion
Plan #4	<ul style="list-style-type: none"> • Expansion Scenario with Multi-Modal Focus • Builds on Plans #1 and #2 	\$66.5 Billion

Hypothetical Plan #1: Preservation and Operating System Focus

Purpose	<ul style="list-style-type: none"> ▶ Preserving and operating the existing system in a safe manner now and into the future
Key Elements	<ul style="list-style-type: none"> ▶ <u>Preservation</u>: Maintenance of the system infrastructure in a state of good repair, including bringing the system up to standard ▶ <u>General Operations/Maintenance/Admin</u>: Sustained operation of the system including non-fixed infrastructure (e.g., support vehicles, transit buses) and all administrative costs ▶ <u>Operational Improvements</u>: Increased utilization of existing capacity (general ITS-type improvements)
Examples	<ul style="list-style-type: none"> ▶ Preservation: Paving, repaving, bridge resurfacing, chip n' sealing, widening shoulders (to bring them to standard) ▶ General O&M: Replacing transit buses, striping lanes, replacing street or runway lights, maintaining highway service vehicles ▶ Administration: Salaries and overhead for agency staff (e.g., ADOT, regional planning agencies) ▶ Operational Improvements: Changeable message signs, ramp metering, signal synchronization, upgrading of navigation systems (aviation)

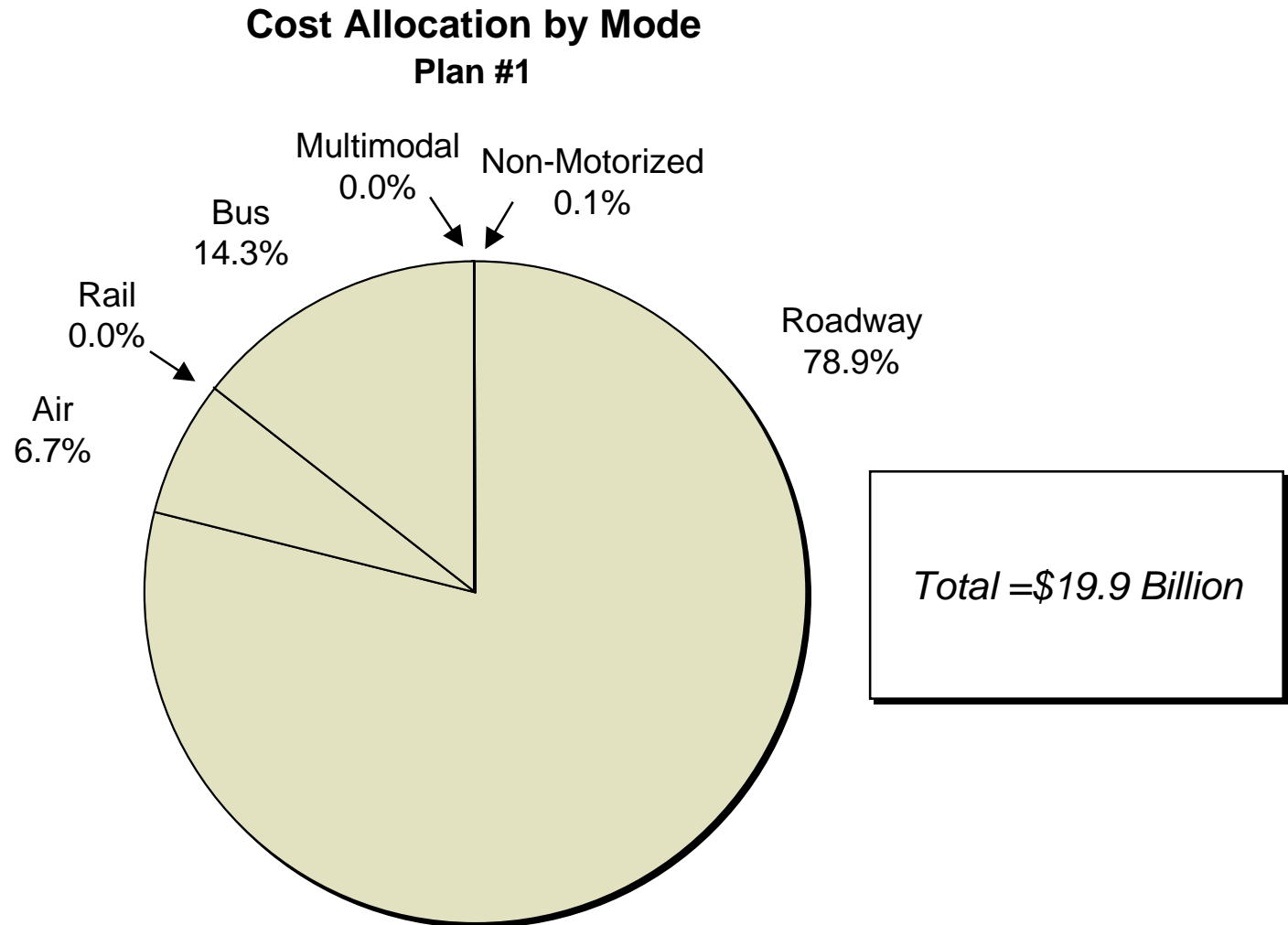
Hypothetical Plans

Examples of Projects Contained in Hypothetical Plan #1

- ▶ Roadway Preservation: Overlay Lincoln Dr from 32nd St to Scottsdale Road; \$683,000. Maricopa County. Contained in 1998-1999 Town of Paradise Valley Annual Budget
- ▶ Air Preservation: Pavement preservation for Runway 05-23; \$115,000. Casa Grande Municipal Airport, Gila County. Contained in Year 2000 Arizona State Aviation Needs Study
- ▶ Roadway O & M: Annual cost to replace mercury street lighting, City of Flagstaff; \$40,000. Coconino County. Contained in 1999-2000 City of Flagstaff Annual Budget and Financial Plan
- ▶ Bus O & M: Annual operating cost for existing dial-a-ride service, City of Lake Havasu; \$360,000. Mohave County. Contained in Arizona DOT Transit Plan, Final Report, 1997
- ▶ Air O & M: Install medium-intensity lighting on Taxiway C and exits; \$412,000. Ryan Field, Pima County. Contained in Year 2000 Arizona State Aviation Needs Study
- ▶ Roadway Admin: Public Works Street Division administrative expenses, FY 00; \$1,205,000. Maricopa County. Contained in Year 2000 City of Peoria Annual Program Budget
- ▶ Roadway Operational Improvement: Install variable message sign, I-10 at SR 187 and SR 387; \$520,000. Pinal County. Contained in Year 1999 I-10 Phoenix to Tucson Corridor Profile Analysis Study

Hypothetical Plans

Plan #1 Allocates a Significant Portion of Costs to Existing Roadway Preservation and Bus Operations



Hypothetical Plans

Plan #1 is Preservation and Operations Intensive and Has About 3,400 Projects

Type	Number of Projects	Sum of Project Costs for Hypothetical Plan # 1
Expansion	0	\$0
Maintenance and Operations (including administration)	1,725	\$10,614,000,000
Operational Improvements (increased utilization of existing capacity)	280	\$276,000,000
Preservation	1,396	\$9,056,000,000
Total	3,401	\$19,945,000,000

Hypothetical Plans

Hypothetical Plan #2: Future Expenditures Based on Programmed Costs

Purpose	<ul style="list-style-type: none"> ▶ Including all programmed projects ▶ Adding overall operations / administration costs that may not be a part of any program ▶ Estimated future expenditures based on current programmed costs
Key Elements	<ul style="list-style-type: none"> ▶ <u>Preservation</u>: Maintenance of the system infrastructure in a state of good repair, including bringing the system up to standard ▶ <u>General Operations/Maintenance/Admin</u>: Sustained operation of the system including non-fixed infrastructure (e.g., support vehicles, transit buses) and all administrative costs ▶ <u>Operational Improvements</u>: Increased utilization of existing capacity (general ITS-type improvements) ▶ <u>Expansion</u>: System expansion where funds are already committed (e.g., TIPs)

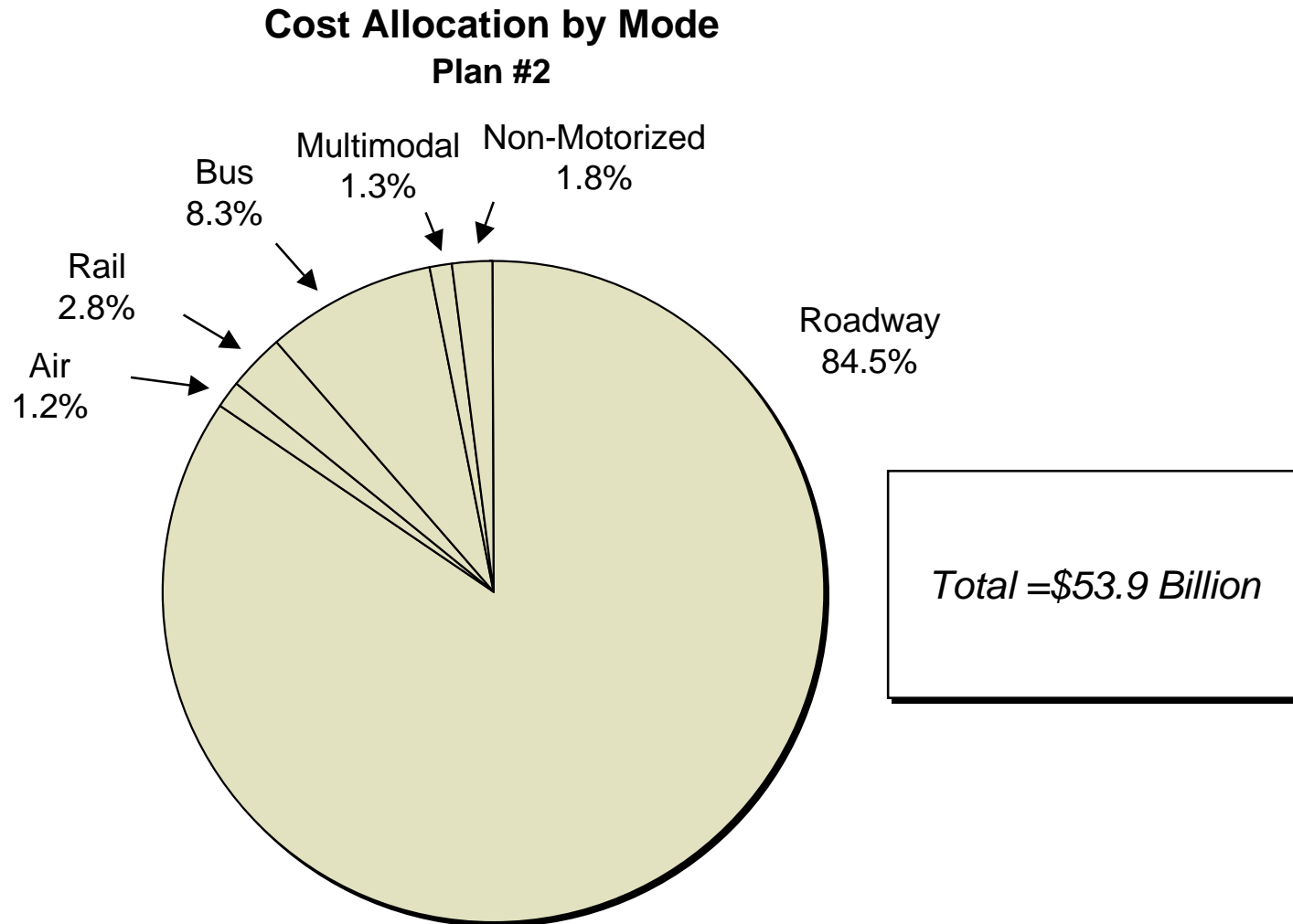
Hypothetical Plans

Examples of Projects Contained in Hypothetical Plan #2 are Shown

- ▶ Roadway Expansion: Construct SR 69 / US 89 connector road; \$9,500,000. City of Prescott, Yavapai County. Contained in City of Prescott FY 1999-2000 Budget
- ▶ Bus Expansion: Purchase forty buses to expand commuter service; \$16,000,000. Maricopa County. Contained in MAG FY 2000-2004 Transportation Improvement Program
- ▶ Rail Expansion: Regional rail development, preliminary engineering; \$848,000. Maricopa County. Contained in MAG FY 2000-2004 Transportation Improvement Program
- ▶ Air Expansion: Airport feasibility study grant; \$233,000. City of Peoria, Maricopa County. Contained in Year 2000 City of Peoria Annual Program Budget
- ▶ Multimodal Expansion: Construction of Union Pacific multimodal center; \$16,045,000. City of Tucson, Pima County. Contained in Year 2000 PAG Transportation Improvement Program
- ▶ Roadway Preservation: SR 264 bridge replacement at Jeddito Wash; \$1,700,000. Navajo County. Contained in ADOT 2001-2005 Tentative 5-Year Program
- ▶ Roadway O & M: Public works street sweeping expenses, FY 99; \$395,000. City of Yuma, Yuma County. Contained in FY 1998-1999 City of Yuma Budget Summary

Hypothetical Plans

Plan #2, Extrapolation of Programmed Projects, Has Most Costs in the Roadway Mode



Hypothetical Plans

Plan #2 Consists of About 2,700 Programmed Projects, with Costs Extrapolated to a Twenty-Year Timeframe

Type	Number of Projects	Sum of Project Costs for Hypothetical Plan # 2
Expansion	1,893	\$40,675,000,000
Maintenance and Operations (including administration)	503	\$5,339,000,000
Operational Improvements (increased utilization of existing capacity)	55	\$236,000,000
Preservation	252	\$7,625,000,000
Total	2,703	\$53,875,000,000

Hypothetical Plans

Hypothetical Plan #3 Transportation System Expansion - Roadway Improvement Focus

Purpose

- ▶ Expansionary plan throughout the state with focus on highway improvements
- ▶ Builds on Plan 1 and the programmed projects in five year plans

Key Elements

- ▶ All preservation and M&O/administrative projects, 5 year programs PLUS
- ▶ Roadway expansion along major corridors
- ▶ Roadway expansion in rural and tribal areas
- ▶ Major aviation projects

Examples

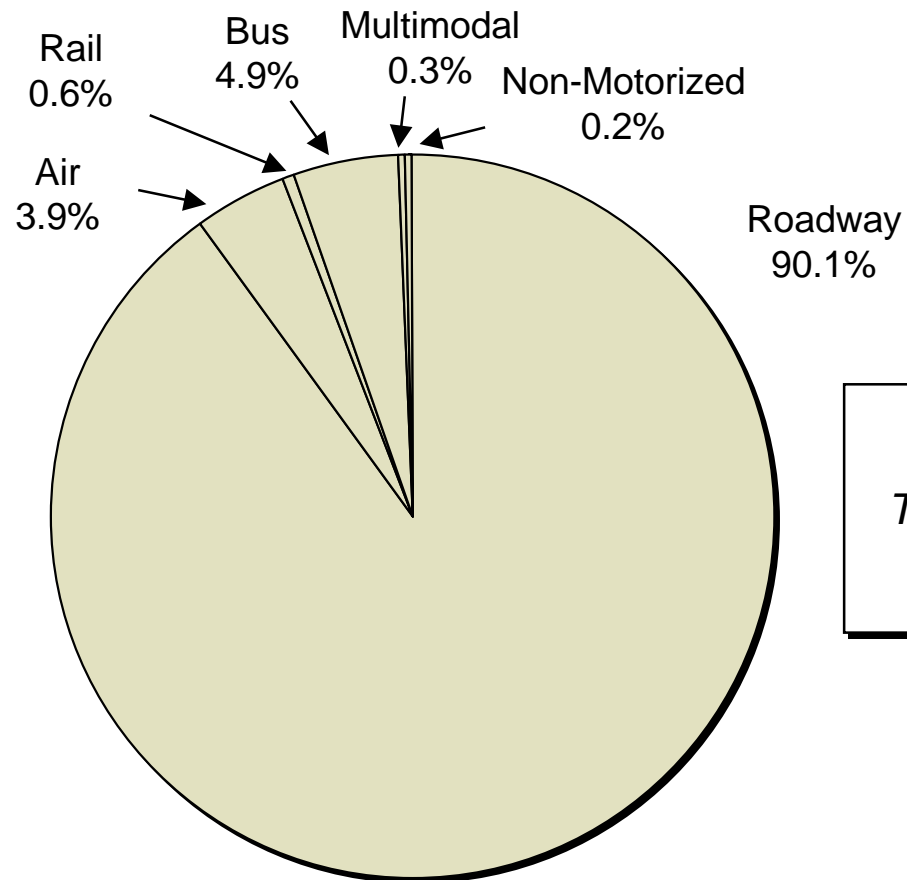
- ▶ I-10 Widening Project
- ▶ Major Road construction

Hypothetical Plans

Plan #3 Has a Roadway Expansion Focus

Cost Allocation by Mode

Plan #3



Total = \$64.2 Billion

Hypothetical Plans

Plan #3 is Heavy in Roadway Expansion and Has Close to 7,500 Projects

Type	Number of Projects	Sum of Project Costs for Hypothetical Plan # 3
Expansion	4,083	\$44,282,000,000
Maintenance and Operations (including administration)	1,725	\$10,614,000,000
Operational Improvements (increased utilization of existing capacity)	280	\$276,000,000
Preservation	1,396	\$9,056,000,000
Total	7,484	\$64,227,000,000

Hypothetical Plans

To Determine Some of the Impacts of Plan #3, Every Major Freeway Section in Arizona Was Examined as a Case Study

CORRIDOR	CURRENT TRANSPORTATION SUPPLY: ROADWAY, BUS, RAIL
I-10 West: Phoenix to California border	147 miles. Four lane freeway (2 in each direction) west of Phoenix area. 11 bus round trips daily, operated by Greyhound and Turismos RapiDOS. No rail service.
I-10 Central: Phoenix to Tucson	117 miles. Four lane freeway outside of Phoenix and Tucson areas. 38 bus round trips daily, operated by Greyhound, Arizona Shuttle Service, Arizona Flying Coach, K-T Services, and Turismos RapiDOS. No direct rail service; Amtrak line runs along I-8 then south to Tucson, bypassing Phoenix.
I-10 East: Tucson to New Mexico border	138 miles. Four lane freeway east of Tucson area. 11 bus round trips daily, operated by Greyhound and Turismos RapiDOS. One Amtrak rail round trip four days a week.
I-17: Phoenix to Flagstaff	141 miles. Four lane freeway outside of Phoenix and Flagstaff areas. 13 bus round trips daily, operated by Greyhound, Navi-Hopi Tours, and Imperial Trailways. No rail service.
I-40 West: Flagstaff to California border	193 miles. Four lane freeway west of Flagstaff area. 2 bus round trips daily, operated by Greyhound. One Amtrak rail round trip daily.
I-40 East: Flagstaff to New Mexico border	165 miles. Four lane freeway east of Flagstaff area. 4 bus round trips daily, operated by Greyhound. One Amtrak rail round trip daily.
I-19: Tucson to Mexico border	64 miles. Four lane freeway south of Tucson area. 22 bus round trips daily, operated by Greyhound and Citizen Auto Stage. No rail service.
I-8: I-10 to California border	180 miles. Four lane freeway outside of Yuma area. 3 bus round trips daily, operated by Greyhound. One Amtrak rail round trip four days a week.

Hypothetical Plans

Other Key Highways in Arizona Were Also Selected as Case Studies

CORRIDOR	CURRENT TRANSPORTATION SUPPLY: ROADWAY, BUS, RAIL
SR 260: Payson to Show Low	99 miles. Two lane highway (1 in each direction), with limited passing lanes. No bus or rail service.
SR 77: Tucson to Show Low	188 miles. Two lane highway north of Pima County. No bus or rail service.
SR 85: I-8 to I-10	39 miles. Two lane highway. 1 bus round trip four days a week, operated by Ajo Stage Lines. No rail service.
US 60: Apache Junction to Globe	56 miles. Four lane highway for about 24 miles (Apache Jctn to Florence Jctn; Miami to Globe). Two lane highway for about 32 miles. Bus service limited to between Miami and Globe. No rail service.
US 93: Beardslake Canal to Hoover Dam	208 miles, not including overlap with I-40. Four lane highway for about 82 miles (south of Wickenburg; I-40 to Lake Mead Rec Area border). Two lane highway for about 126 miles, with limited passing lanes. 4 bus round trips daily, operated by Greyhound. No rail service.
US 95: Bullhead City to Mexico border	235 miles, not including overlap with I-40. Mostly a two lane highway, with some four lane stretches. No bus or rail service.

Recent Corridor Studies That Proposed Projects Specifically for These Key Highway Sections Served as Primary Documents

- ▶ I-10: I-10/B-10 Multimodal Corridor Profile, 1998 (West); I-10 Phoenix to Tucson Corridor Profile Analysis Study, 1999 (Central); SE Arizona I-10 Corridor Profile Study, 1998 (East)
- ▶ I-17: Phoenix-Flagstaff-Page (I-17/US 89) Corridor Profile, 1998
- ▶ I-40: I-40 Multimodal Corridor Study, 1999 (both West and East)
- ▶ I-19: I-19 Tucson to Nogales Multimodal Corridor Profile Review, 1996
- ▶ I-8: I-8/B-8/SR 280 Multimodal Corridor Study, 1998
- ▶ SR 260: Phoenix-Payson-Mogollon Rim (SR 87/260) Multimodal Corridor Profile Study, 1997
- ▶ SR 77: Tucson-Globe-Holbrook (SR 77) Multimodal Corridor Profile Study, 1998
- ▶ SR 85: SR 85 Multimodal Corridor Profile, 1998
- ▶ US 60: US 60 Corridor Profile Study, Inventory and Analysis of Needs, 1998
- ▶ US 93: US 93 Multi-Modal Corridor Profile, 1996
- ▶ US 95: San Luis - Bullhead City (SR/US 95, SR 68, SR 72) Corridor Profile, 1997

Hypothetical Plans

Hypothetical Plan #3 Includes the Following Major Expansion Projects for the Arizona Freeway System

CORRIDOR	MAJOR EXPANSION PROJECTS, HYPOTHETICAL PLAN #3	TOTAL COST
I-10 West: Phoenix to California border	No widening. Construct two new interchanges; improve fourteen interchanges. Reconstruct four bridges.	\$23,000,000
I-10 Central: Phoenix to Tucson	Widening projects along 94 miles (Santan to I-19), with geometric improvements and bridge replacements. Reconstruct or improve over 40 interchanges.	\$1,570,000,000
I-10 East: Tucson to New Mexico border	Add two lanes, 4 miles (Pima Co). Add climbing lane, 18 miles (Pima). Replace, widen two bridges. Three interchange improvements, including at I-19 for \$62 mil.	\$92,000,000
I-17: Phoenix to Flagstaff	Widening projects along 138 miles (Thomas Rd to I-40), including HOV facilities for 9 miles (SR 101 to Carefree Hwy). Reconstruct or improve over 30 interchanges.	\$1,927,000,000
I-40 West: Flagstaff to California border	Widen from 4 to 6 lanes along 168 miles, non-continuous. Climbing lanes. Construct three new interchanges; reconstruct twenty-six interchanges.	\$991,000,000
I-40 East: Flagstaff to New Mexico border	Widen from 4 to 6 lanes along 47 miles, non-continuous. Reconstruct six interchanges.	\$551,000,000
I-19: Tucson to Mexico border	Capacity improvements for 20 miles. Reconstruct or improve 23 interchanges.	\$197,000,000
I-8: I-10 to California border	Limited widening from 4 to 6 lanes within city of Yuma. Improve horizontal / vertical curves. Bridge replacement. Reconstruct or improve over 30 interchanges.	\$132,000,000

Hypothetical Plans

Hypothetical Plan #3 Includes the Following Major Expansion Projects for Key Highway Sections in Arizona

CORRIDOR	MAJOR EXPANSION PROJECTS, HYPOTHETICAL PLAN #3	TOTAL COST
SR 260: Payson to Show Low	Widen from 2 to 4 lanes for 13 miles near Payson and for 20 miles near Forest Lakes. Add passing lanes at select locations along 25 miles near Show Low.	\$482,000,000
SR 77: Tucson to Show Low	Construct climbing and passing lanes along 295 miles, non-continuous. Limited widening to six lanes within city of Tucson.	\$41,000,000
SR 85: I-8 to I-10	Widening projects along length of corridor.	\$188,000,000
US 60: Apache Junction to Globe	Widen from 2 to 4 lanes for 9 miles, west of Miami. Add climbing lane for 3 miles. Rebuild SR 177 interchange. Intersection upgrades near Florence Jctn, Miami, Globe.	\$82,000,000
US 93: Beardslake Canal to Hoover Dam	Widening for 15 miles through Lake Mead area. Widen from 2 to 4 lanes for 108 miles from I-40 to Wickenburg. New bridge at Colorado River (\$71 mil).	\$1,278,000,000
US 95: Bullhead City to Mexico border	Widen to 6 lanes for 12 miles, and to 4 lanes for 38 miles, in Yuma. Widen to 6 lanes for 1 mile, and to 4 lanes for 11 miles, in La Paz. Widen to 6 lanes for 26 miles, and to 4 lanes for 25 miles, in Mohave. Add passing lane at other sections.	\$569,000,000

Hypothetical Plans

Hypothetical Plan #3 Also Contains Many Localized Expansion Projects in Maricopa and Pima Counties

STUDY AREA	MAJOR EXPANSION PROJECTS, HYPOTHETICAL PLAN #3	TOTAL COST
Expansion, Maricopa County	Construct over 4,400 miles of arterial streets. Controlled access facility, Thomas to SR 101 (\$364 mil). Nineteen miles of freeway, Via Linda to I-17 (\$191 mil). Seven miles of freeway, Northern to Buckeye Rd (\$111 mil). Collector distributor roadway, 16th St to Baseline Rd (listed at \$262 mil; outlier adjusted to \$188 mil). Grade separations for Grand Expressway (\$167 mil). Major improvements also for 107th Ave, 99th Ave, 83rd Ave, 55th Ave, 51st Ave, 43rd Ave, 35th Ave, 7th Ave, 48th St, 56th St, Camelback, Lower Buckeye, Southern, Bell, Pecos, Union Hills, Chandler, McDowell, Pinnacle Peak, Baseline, Deer Valley, Tatum, Thomas, Van Buren. Programmed transit expansions.	\$21,588,000,000
Expansion, Pima County	New roads and widening projects throughout county. Barraza-Aviation Parkway extension and downtown segment (\$192 mil). Improvements to Valencia Rd (\$202 mil). Improvements to La Cholla (\$192 mil). Improvements to Grant Rd (\$122 mil). Improvements to Broadway (\$228 mil). Major improvements also for Thornydale, Silverbell, Ina, Magee, Alvernon, Shannon, La Canada, River Rd, Kolb, Sabino Canyon, Arroyo Chico, Houghton, Skyline, First Ave. Add new passenger terminal at Tucson Airport (\$83 mil). Programmed transit expansions.	\$6,778,000,000

Hypothetical Plans

Roadway Costs Proposed in Each Case Study Area For Hypothetical Plan #3 Were Compared

Corridor or Study Area	From Primary Document: Lane Additions	From Primary Document: Interchange and Spot Improvements	From Other Documents: Lane Additions	From Other Documents: Interchange and Spot Improvements	TOTAL COST
I-10 West: Phoenix to California border	\$0	\$4,000,000	\$0	\$19,000,000	\$23,000,000
I-10 Central: Phoenix to Tucson	\$598,000,000	\$157,000,000	\$729,000,000	\$86,000,000	\$1,570,000,000
I-10 East: Tucson to New Mexico border	\$19,000,000	\$5,000,000	\$0	\$68,000,000	\$92,000,000
I-17: Phoenix to Flagstaff	\$1,156,000,000	\$77,000,000	\$618,000,000	\$76,000,000	\$1,927,000,000
I-40 West: Flagstaff to California border	\$461,000,000	\$530,000,000	\$0	\$0	\$991,000,000
I-40 East: Flagstaff to New Mexico border	\$172,000,000	\$379,000,000	\$0	\$0	\$551,000,000
I-19: Tucson to Mexico border	\$11,000,000	\$77,000,000	\$29,000,000	\$80,000,000	\$197,000,000
I-8: I-10 to California border	\$0	\$74,000,000	\$16,000,000	\$42,000,000	\$132,000,000
SR 260: Payson to Show Low	\$156,000,000	\$3,000,000	\$234,000,000	\$89,000,000	\$482,000,000
SR 77: Tucson to Show Low	\$31,000,000	\$0	\$10,000,000	\$0	\$41,000,000
SR 85: I-8 to I-10	\$0	\$0	\$188,000,000	\$0	\$188,000,000
US 60: Apache Junction to Globe	\$40,000,000	\$10,000,000	\$6,000,000	\$26,000,000	\$82,000,000
US 93: Beardslake Canal to Hoover Dam	\$1,050,000,000	\$71,000,000	\$133,000,000	\$24,000,000	\$1,278,000,000
US 95: Bullhead City to Mexico border	\$493,000,000	\$2,000,000	\$62,000,000	\$12,000,000	\$569,000,000
Expansion: Maricopa County*	(a)	(a)	\$20,566,000,000	(b)	\$20,566,000,000
Expansion: Pima County*	(a)	(a)	\$6,266,000,000	(b)	\$6,266,000,000

* - Corridor-level expenses shown above that are in Maricopa and Pima are not included in these line items to avoid double-counting.

(a) - Primary document designation made only for corridor-level case studies.

(b) - Expenses for intersections, spot improvements, and new roads included as part of the "lane additions" line item.

Hypothetical Plans

Other Modal Costs Proposed in Each Case Study Area For Hypothetical Plan #3 Were Also Compared

Corridor or Study Area	From Primary Document: Bus and Rail Improvements	From Primary Document: Other Modal Improvements (Air, Bike, Ped)	From Other Documents: Bus and Rail Improvements	From Other Documents: Other Modal Improvements (Air, Bike, Ped)	TOTAL COST
I-10 West: Phoenix to California border	\$0	[c]	\$0	[c]	\$0
I-10 Central: Phoenix to Tucson	\$0	[c]	\$0	[c]	\$0
I-10 East: Tucson to New Mexico border	\$0	[c]	\$0	[c]	\$0
I-17: Phoenix to Flagstaff	\$0	[c]	\$0	[c]	\$0
I-40 West: Flagstaff to California border	\$0	[c]	\$0	[c]	\$0
I-40 East: Flagstaff to New Mexico border	\$0	[c]	\$0	[c]	\$0
I-19: Tucson to Mexico border	\$0	[c]	\$0	[c]	\$0
I-8: I-10 to California border	\$0	[c]	\$0	[c]	\$0
SR 260: Payson to Show Low	\$0	[c]	\$0	[c]	\$0
SR 77: Tucson to Show Low	\$0	[c]	\$0	[c]	\$0
SR 85: I-8 to I-10	\$0	[c]	\$0	[c]	\$0
US 60: Apache Junction to Globe	\$0	[c]	\$0	[c]	\$0
US 93: Beardslake Canal to Hoover Dam	\$0	[c]	\$0	[c]	\$0
US 95: Bullhead City to Mexico border	\$0	[c]	\$0	[c]	\$0
Expansion: Maricopa County*	(a)	(a)	\$629,000,000	\$393,000,000	\$1,022,000,000
Expansion: Pima County*	(a)	(a)	\$60,000,000	\$452,000,000	\$512,000,000

* - Corridor-level expenses shown above that are in Maricopa and Pima are not included in these line items to avoid double-counting.

(a) - Primary document designation made only for corridor-level case studies.

[c] - Corridor-level improvements identified do not include localized expansion projects in municipalities along the corridor.

As such, air / bike / ped expansion projects were not applicable for inclusion here.

Hypothetical Plans

Implementing Major Plan 3 Projects Would Address Many of the Congestion Issues Currently Forecasted



Hypothetical Plans

The No Build - Build Comparison Highlights the Difference



Hypothetical Plans

Hypothetical Plan #4 Transportation System Expansion - Multimodal Options Focus

Purpose

- ▶ Expansionary plan throughout the state which includes all non-roadway transportation options (e.g., bus, transit, rail, aviation, bicycle)
- ▶ Major highway improvements are included only when a non-highway option is not available
- ▶ Builds on Plan 1 and the programmed projects in five year plans

Key Elements

- ▶ All preservation and M&O/administrative projects, 5 year programs PLUS
- ▶ Non-highway expansion whenever possible (i.e., bus, transit, rail, aviation)
- ▶ Highway and roadway expansion when multimodal alternatives are not available

Examples

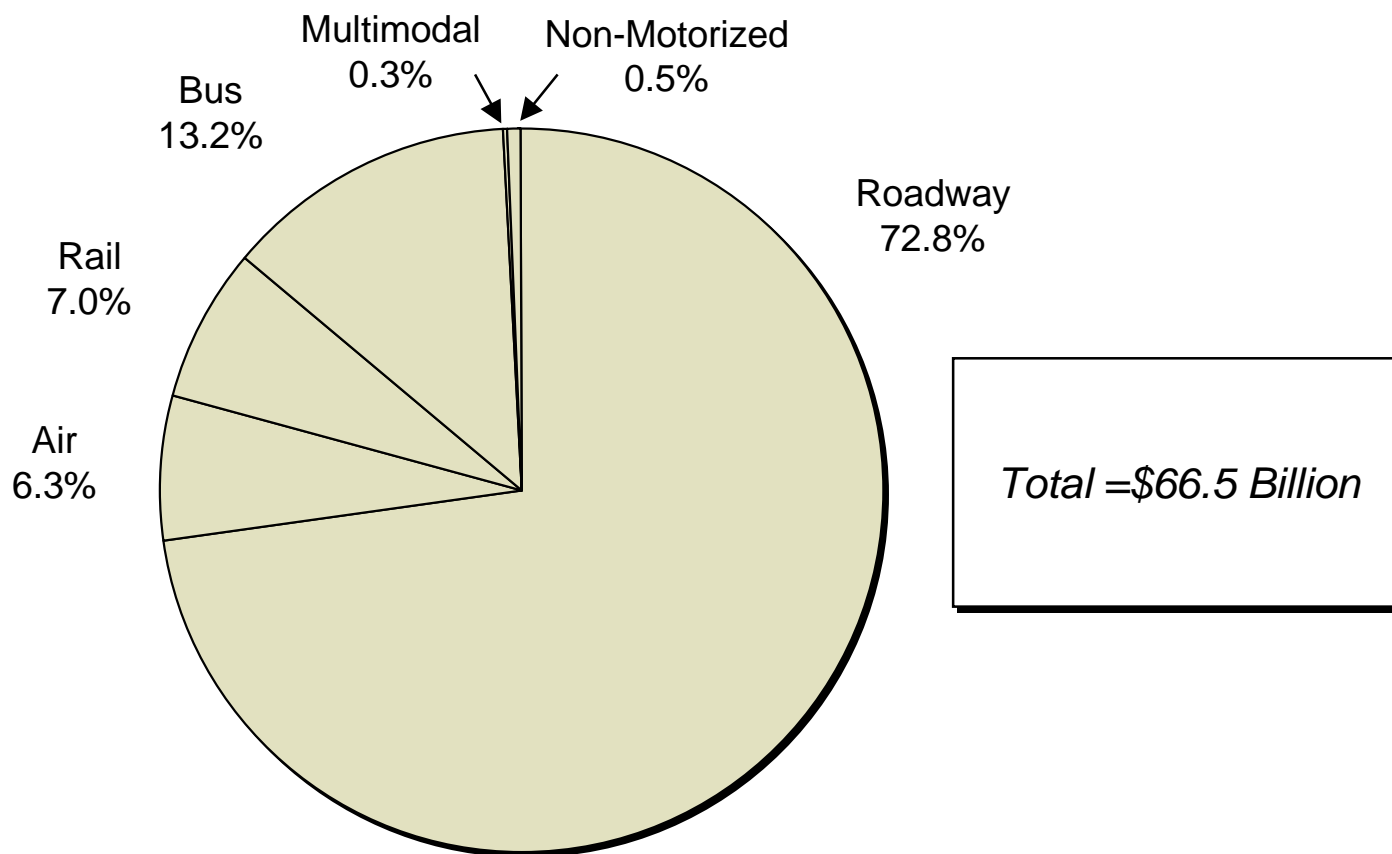
- ▶ I-10 Corridor from Phoenix to Tucson (conventional rail service)
- ▶ SR 77, Show Low to Tucson (new intercity bus service from Tucson to Globe)

Hypothetical Plans

Plan #4 Has Stronger Modal Balance Than Plan #3

Cost Allocation by Mode

Plan #4



Hypothetical Plans

Plan #4 Differs from Plan #3 For Two of the Eight Major Freeway Sections in Arizona

CORRIDOR	HYPOTHETICAL PLAN #4, DIFFERENCE FROM PLAN #3	TOTAL COST
I-10 West: Phoenix to California border	No difference.	\$23,000,000
I-10 Central: Phoenix to Tucson	Reduced funds available for widening projects along 94 miles (84 percent less, which is \$1,118 mil less). Reduced funds available for interchange improvements (57 percent less, which is \$138 mil less). Conventional intercity rail service between Phoenix and Tucson (\$1,251 mil).	\$1,566,000,000
I-10 East: Tucson to New Mexico border	No difference.	\$92,000,000
I-17: Phoenix to Flagstaff	No difference.	\$1,927,000,000
I-40 West: Flagstaff to California border	No difference.	\$991,000,000
I-40 East: Flagstaff to New Mexico border	No difference.	\$551,000,000
I-19: Tucson to Mexico border	Reduce extent of capacity improvements from 20 miles down to 4 miles. Reduce extent of interchange reconstruction or improvement from 23 interchanges down to 16. Extend conventional rail service from Phoenix - Tucson south to Nogales (\$77 mil).	\$145,000,000
I-8: I-10 to California border	No difference.	\$132,000,000

Hypothetical Plans

Plan #4 Differs from Plan #3 For Two of the Six Key Highway Sections Selected as Case Studies

CORRIDOR	HYPOTHETICAL PLAN #4, DIFFERENCE FROM PLAN #3	TOTAL COST
SR 260: Payson to Show Low	No difference.	\$482,000,000
SR 77: Tucson to Show Low	No construction of climbing or passing lanes. Widening in city of Tucson kept. Purchase vehicles, operate intercity bus service between Tucson and Miami-Globe (\$20 mil - 20 yr cost). Extension to Show Low was not considered explicitly.	\$30,000,000
SR 85: I-8 to I-10	No difference.	\$188,000,000
US 60: Apache Junction to Globe	Highway projects unchanged. New regional intercity service in Gila Co (\$2 mil - 20 yr cost). Add nine round trips daily between Miami and Globe (\$2 mil - 20 yr cost). Operate three round trips daily between Globe and San Carlos (\$2 mil - 20 yr cost).	\$87,000,000
US 93: Beardslake Canal to Hoover Dam	No difference.	\$1,278,000,000
US 95: Bullhead City to Mexico border	No difference.	\$569,000,000

Hypothetical Plans

Plan #4 Features Big Differences From Plan #3 for Maricopa and Pima Counties

STUDY AREA	HYPOTHETICAL PLAN #4, DIFFERENCE FROM PLAN #3	TOTAL COST
Expansion, Maricopa County	Reduced expenses designated for roadway improvements (12 percent less, which is \$2,443 mil less). Major expansion of bus fixed-route and paratransit services, with extensions to Rural Maricopa. This increases transit operating expenses by about 210 percent more than the present levels of about 20 million vehicle revenue-miles annually. Purchase buses, construct new maintenance facility to accommodate expansion. Construct 39 new miles of light rail (\$1,211 mil). Design, acquire land, construct a starter corridor fixed guideway system in Phoenix metro area (\$937 mil). 33 miles of commuter rail between Glendale and Mesa (\$175 mil). Major bicycle and pedestrian improvements.	\$26,034,000,000
Expansion, Pima County	Reduced expenses designated for roadway improvements (16 percent less, which is \$994 mil less). Major expansion of bus fixed-route and paratransit services, with extensions to Marana, Oro Valley, Sahuarita. This increases transit operating expenses by about 85 percent more than the present levels of about 9 million vehicle revenue-miles annually. Purchase buses to accommodate expansion. Plan, construct rail system in Tucson (\$618 mil). Meet transit needs in rural Pima (\$15 mil). Major bicycle and pedestrian improvements.	\$7,640,000,000

Hypothetical Plans

Plan #4 Roadway Expenses Are 17.5 Percent Lower than Plan #3 for the Corridors, and 12.8 Percent Lower for Maricopa and Pima

Corridor or Study Area	From Primary Document: Lane Additions	From Primary Document: Interchange and Spot Improvements	From Other Documents: Lane Additions	From Other Documents: Interchange and Spot Improvements	TOTAL COST
I-10 West: Phoenix to California border	\$0	\$4,000,000	\$0	\$19,000,000	\$23,000,000
I-10 Central: Phoenix to Tucson	\$110,000,000	\$68,000,000	\$99,000,000	\$38,000,000	\$315,000,000
I-10 East: Tucson to New Mexico border	\$19,000,000	\$5,000,000	\$0	\$68,000,000	\$92,000,000
I-17: Phoenix to Flagstaff	\$1,156,000,000	\$77,000,000	\$618,000,000	\$76,000,000	\$1,927,000,000
I-40 West: Flagstaff to California border	\$461,000,000	\$530,000,000	\$0	\$0	\$991,000,000
I-40 East: Flagstaff to New Mexico border	\$172,000,000	\$379,000,000	\$0	\$0	\$551,000,000
I-19: Tucson to Mexico border	\$0	\$4,000,000	\$5,000,000	\$59,000,000	\$68,000,000
I-8: I-10 to California border	\$0	\$74,000,000	\$16,000,000	\$42,000,000	\$132,000,000
SR 260: Payson to Show Low	\$156,000,000	\$3,000,000	\$234,000,000	\$89,000,000	\$482,000,000
SR 77: Tucson to Show Low	\$0	\$0	\$10,000,000	\$0	\$10,000,000
SR 85: I-8 to I-10	\$0	\$0	\$188,000,000	\$0	\$188,000,000
US 60: Apache Junction to Globe	\$40,000,000	\$10,000,000	\$6,000,000	\$26,000,000	\$82,000,000
US 93: Beardslake Canal to Hoover Dam	\$1,050,000,000	\$71,000,000	\$133,000,000	\$24,000,000	\$1,278,000,000
US 95: Bullhead City to Mexico border	\$493,000,000	\$2,000,000	\$62,000,000	\$12,000,000	\$569,000,000
Expansion: Maricopa County*	(a)	(a)	\$18,123,000,000	(b)	\$18,123,000,000
Expansion: Pima County*	(a)	(a)	\$5,273,000,000	(b)	\$5,273,000,000

* - Corridor-level expenses shown above that are in Maricopa and Pima are not included in these line items to avoid double-counting.

(a) - Primary document designation made only for corridor-level case studies.

(b) - Expenses for intersections, spot improvements, and new roads included as part of the "lane additions" line item.

Hypothetical Plans

Plan #4 Has About \$10 Billion More Expenses Designated for Other Modal Improvements in the Key Study Areas Than Plan #3

Corridor or Study Area	From Primary Document: Bus and Rail Improvements	From Primary Document: Other Modal Improvements (Air, Bike, Ped)	From Other Documents: Bus and Rail Improvements	From Other Documents: Other Modal Improvements (Air, Bike, Ped)	TOTAL COST
I-10 West: Phoenix to California border	\$0	[c]	\$0	[c]	\$0
I-10 Central: Phoenix to Tucson	\$0	[c]	\$1,251,000,000	[c]	\$1,251,000,000
I-10 East: Tucson to New Mexico border	\$0	[c]	\$0	[c]	\$0
I-17: Phoenix to Flagstaff	\$0	[c]	\$0	[c]	\$0
I-40 West: Flagstaff to California border	\$0	[c]	\$0	[c]	\$0
I-40 East: Flagstaff to New Mexico border	\$0	[c]	\$0	[c]	\$0
I-19: Tucson to Mexico border	\$0	[c]	\$77,000,000	[c]	\$77,000,000
I-8: I-10 to California border	\$0	[c]	\$0	[c]	\$0
SR 260: Payson to Show Low	\$0	[c]	\$0	[c]	\$0
SR 77: Tucson to Show Low	\$20,000,000	[c]	\$0	[c]	\$20,000,000
SR 85: I-8 to I-10	\$0	[c]	\$0	[c]	\$0
US 60: Apache Junction to Globe	\$0	[c]	\$5,000,000	[c]	\$5,000,000
US 93: Beardslake Canal to Hoover Dam	\$0	[c]	\$0	[c]	\$0
US 95: Bullhead City to Mexico border	\$0	[c]	\$0	[c]	\$0
Expansion: Maricopa County*	(a)	(a)	\$6,198,000,000	\$1,713,000,000	\$7,911,000,000
Expansion: Pima County*	(a)	(a)	\$1,709,000,000	\$658,000,000	\$2,367,000,000

* - Corridor-level expenses shown above that are in Maricopa and Pima are not included in these line items to avoid double-counting.

(a) - Primary document designation made only for corridor-level case studies.

[c] - Corridor-level improvements identified do not include localized expansion projects in municipalities along the corridor.

As such, air / bike / ped expansion projects were not applicable for inclusion here.

Hypothetical Plans

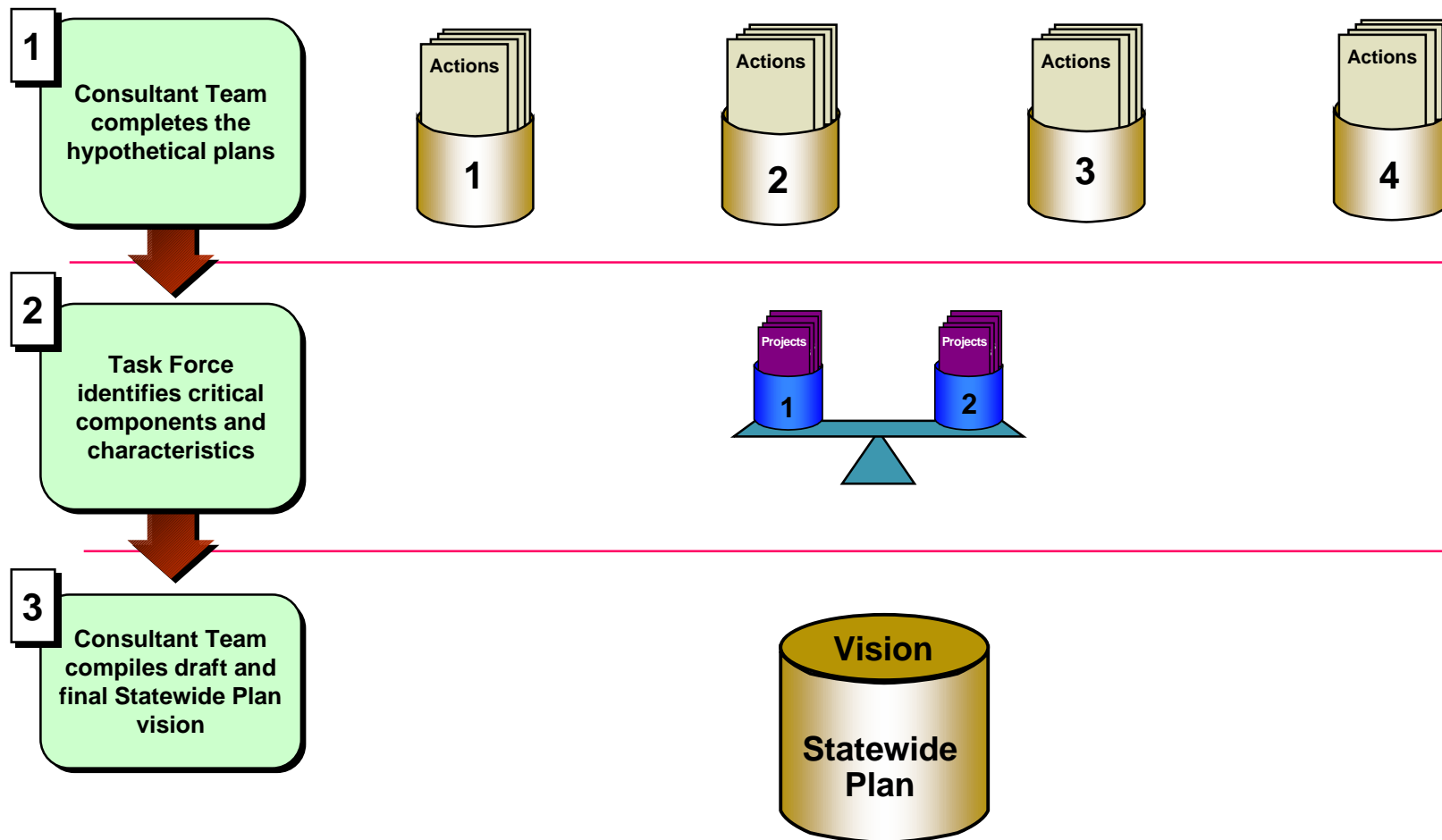
Plan #4 is Heavy in Expansion For All Modes and Features Nearly 9,000 Projects

Type	Number of Projects	Sum of Project Costs for Hypothetical Plan # 4
Expansion	5,573	\$46,551,000,000
Maintenance and Operations (including administration)	1,725	\$10,614,000,000
Operational Improvements (increased utilization of existing capacity)	280	\$276,000,000
Preservation	1,396	\$9,056,000,000
Total	8,974	\$66,496,000,000

III. Next Steps

Next Steps

Where Do We Go from Here



Next Steps

We Need to Discuss What the Statewide Plan Is and What It Is Not

Is...

- ▶ Based on broad categorical levels of expenditures by type
- ▶ Recommendations based on appropriate mixture of project types and level of expense
- ▶ Reflects a 20-Year Vision for the State of Arizona based on Needs and Task Force and project team best judgment

Is Not...

- ▶ Not a list of projects
- ▶ Does not endorse any individual study, plan or program

Next Steps

The Task Force Plan Will Follow Broad Categorical Priorities

	Roadway	Rail	Bus	Air	Nonmotorized	Multimodal	TOTAL
Maintenance/ Operations/ Administration	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %
Preservation	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %
Operational Improvements (Increased Utilization Of Existing Capacity)	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %
Expansion	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %
TOTAL	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %	\$ %

Allocation reflects Task Force's vision

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Next Steps

Together We Need to Develop Critical Components and Characteristics for the Draft Plan

KEY QUESTIONS	
Preservation	<ul style="list-style-type: none"> • Inclusion of all preservation projects • Administration costs extrapolation
Need Responsive	<ul style="list-style-type: none"> • Major travel corridors • Key growth areas • Equity
Modal Representation	<ul style="list-style-type: none"> • In line with revenue projections • All modes represented
Funding	<ul style="list-style-type: none"> • Existing revenue scenario • Incorporation of Plan 2 programmed projects (5 year only) • Likely needs exceed available revenues

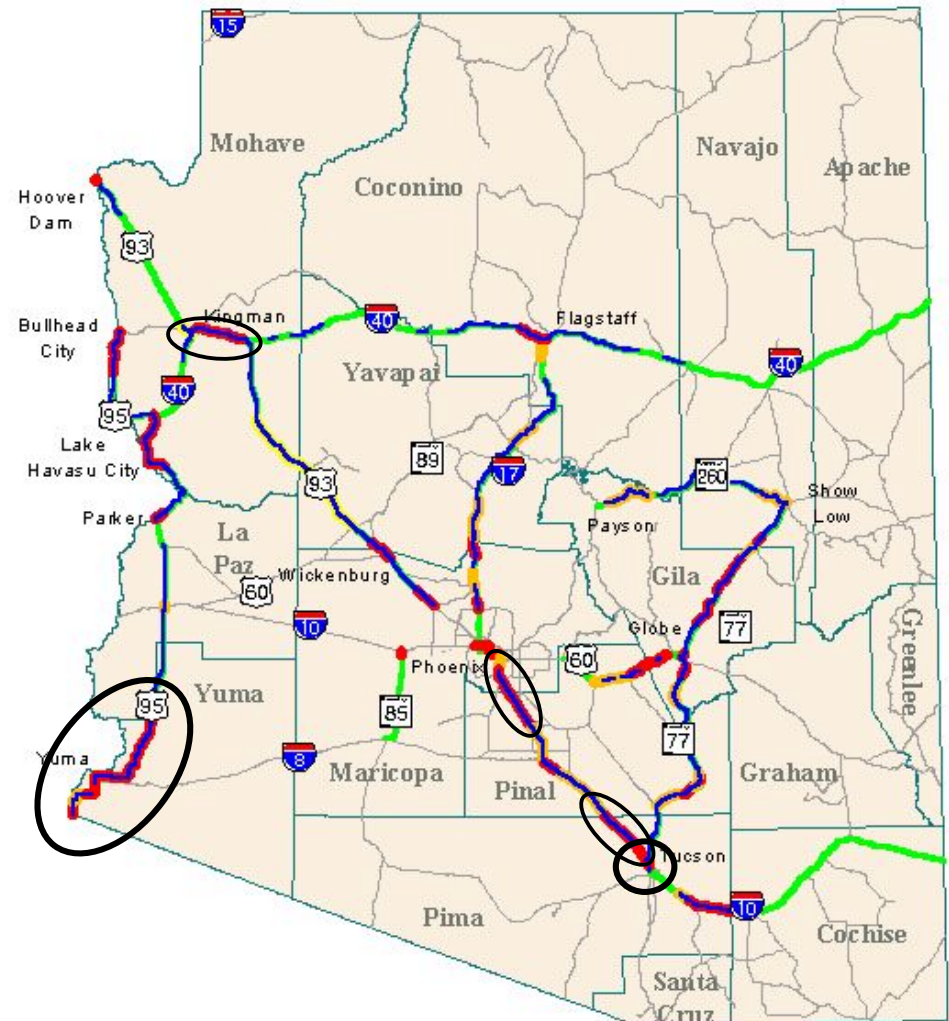
Next Steps

Likely Needs Exceed Database Components

	Likely Range	
Revenues	<ul style="list-style-type: none"> • \$ 38B 	?
Needs	<ul style="list-style-type: none"> • Plan 1 - \$20B • Plan 2 - \$55B • Plan 3 - \$64B • Plan 4 - \$66B 	<ul style="list-style-type: none"> • \$22-25B? • \$55-60B? • \$70-80B? • \$70-80B?

Existing Revenue Scenario Example

- ▶ Assuming **\$38 billion** represents available revenues over 20 years
- ▶ Assuming **\$20-22 billion** for the “preservation” plan totals, then **\$16 billion** would be available. Select expansion-type projects could be completed.
 - US95 Yuma (LOS E/F => C)
 - I-10 near Tucson (LOS E/F => D)
 - Expanded PAG regional transit services



Next Steps

Your Input is Key to Developing Your Recommended Plan Over the Next Several Weeks

- ▶ Identify the assumptions used in generating the draft plan is important
- ▶ The Task Force input impacts action-type selection and focus
- ▶ The Consultant Team is working to document the draft statewide plan
- ▶ Presentation to the public is expected early next year for information and feedback